

REMARKS

Status of Application

Claims 1-27 are pending in the application; the status of the claims is as follows:

Claims 1-3, 5-8, 10-13, 15-18 and 20-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,552,813 B2 to Yacoub ("Yacoub"), and in view of U.S. Patent No. 6,825,952 to Lee et al. ("Lee").

Claims 4, 9, 14 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yacoub and Lee as applied to claim 1 above, and further in view of Japanese Application Publication No. 410301737 A to Hirofumi et al. ("Hirofumi").

Claim Amendments

Claims 1, 6, 11 and 16 have been amended to more completely claim the print data and the color information upon which the correction process is based. Claim 25 has been amended to more completely claim the print data and the reproduction characteristic upon which the correction process is based. Support for these amendments is found in the present Specification on page 10, lines 6-17. Thus, these changes do not introduce any new matter.

35 U.S.C. § 103(a) Rejections

The rejection of claims 1-3, 5-8, 10-13, 15-18 and 20-27 under 35 U.S.C. § 103(a), as being unpatentable over Yacoub, and in view of Lee, is respectfully traversed based on the following.

Claim 1 includes the limitation:

a substitution controller for correcting print data expressed in a device dependent color system, that was to have been printed out by the

printer in which the problem is detected by said detector, based on a color information of the printer in which the problem is detected by the detector and a color information of the selected substitute printer, to ensure that image quality of the images printed by the selected substitute printer is the same as that of the images printed by the printer in which the problem is detected, and for outputting the corrected print data expressed in the device dependent color system to the selected substitute printer, the color information of the printer in which the problem is detected and the selected substitute printer each includes color conversion information for the respective printer between the device dependent color system and a device independent color space.

Thus, claim 1 requires that the substitution controller correct specific data in a specific manner. In particular, the data that is being corrected is “print data expressed in a device dependent color system, that was to have been printed out by the printer in which the problem is detected...” This data is then corrected, “based on the color information of the printer in which the problem is detected by the detector and a color information of the selected substitute printer.” Lastly, “the corrected print data expressed in the device dependent color system” is outputted. The color information for the two printers “each includes color conversion information for the respective printer between a device dependent color system and a device independent color space.” This print data correction process is illustrated in Fig. 4, in which the print data being corrected is first converted from CMYK (a device dependent color system) into $L^*a^*b^*$ (a device independent color space), *see* page 10, line 6-17. The print data is then converted from $L^*a^*b^*$ (the device independent color space) into CMYK (the device dependent color system) and outputted. Please note that CMYK is an example device dependent color system, while $L^*a^*b^*$ is an example device independent color space. Claim 1 is not restricted to these two examples as those of skill in the art will readily understand that other device dependent and independent color systems/spaces exist.

In contrast, the combination of Yacoub and Lee fails to disclose or suggest correcting this same data in this same manner. Lee appears to disclose correcting data based upon the grayscale printing characteristics of two printers, *see* Fig. 4 and corresponding discussion in the Detailed Description. However, the print data that is

corrected is not “print data expressed in a device dependent color system.” The print data that Lee corrects has not been previously processed such that it is expressed in device dependent color system. In particular, Lee’s correction process is applied to an input grayscale command, e.g., a number between 0 and 255, *see* col. 6, lines 54-61. Lee’s actual correction process transforms these input grayscale commands from the first printer into input grayscale commands for the second printer according to a transformation function $I(i)$, *see* col. 6, lines 54-61. The transformation function $I(i)$ is a function of the measured grayscales printed by the first and second printers ($R_1(i)$ and $R_2(i)$), the measuring based upon densitometer or reflectivity readings, *see* col. 5, lines 22-30 and col. 6, line 49. Lee provides no disclosure or suggestion that the transformation function $I(i)$ or measured grayscales $R_1(i)$ and $R_2(i)$ correspond to a device independent color space. With respect to the requirements of claim 1, Lee’s input grayscale commands that are transformed were not previously processed such that they were expressed in a device dependent color system. Lee discloses processing the input grayscale commands by applying a base transfer function and a halftoning process resulting in the rasterized version of the image sent to the printer, *see* col. 3, lines 14-27. Thus, while Lee does disclose processing input grayscale commands, the resultant print data is not expressed in a device dependent color system. Further, the disclosed processing is not based in any way upon a device independent color space. Therefore, the combination of Yacoub and Lee does not disclose or suggest correcting “print data expressed in a device dependent color system,” outputting “corrected print data expressed in the device dependent color system,” or the use of a device independent color space during the correction process, all three of which are required by claim 1. Because the combination of Yacoub and Lee does not disclose or suggest each limitation of claim 1, the combination cannot render obvious the invention of claim 1.

Claims 2, 3, 5 and 21 depend from claim 1. As claim 1 is considered unanticipated by the combination of Yacoub and Lee, claims 2, 3, 5 and 21 are likewise considered unanticipated. Furthermore, claims 2, 3, 5 and 21 include additional limitations not disclosed or suggested by the combination of Yacoub and Lee. For example, claim 2

requires that the print data include color print data and that the correction process keep a color characteristic of the image constant between the printer with a problem and the substitute printer. Lee, the only patent that discloses print data correction, discloses correcting only grayscale print data, not color print data. Furthermore, it appears that Lee's measurements based upon densitometer or reflectivity readings are incompatible with color images, especially those having potentially millions of colors (32-bit color) and not just 256 grayscale levels. Thus, the combination of Yacoub and Lee does not disclose or suggest each limitation of claim 2 and therefore claim 2 is nonobvious for at least this additional reason. Note that the "gradation characteristic" found in claim 3 is distinct from the "color characteristic" of claim 2 in that a gradation characteristic corresponds to a monochrome or grayscale image, *see* page 14, lines 17-26.

As noted in the January 13, 2006 Office Action, claims 6-8, 10 and 22 correspond to method claims with limitations and scopes similar to apparatus claims 1-3, 5 and 21. As discussed above, the combination of Yacoub and Lee fails to disclose or suggest each limitation of claims 1-3, 5 and 21 and thus similarly fails to disclose or suggest these limitations in claims 6-8, 10 and 22. Therefore, claims 6-8, 10 and 22 are considered nonobvious for the same reasons as claims 1-3, 5 and 21.

Also as noted in the January 13, 2006 Office Action, claims 11-13, 15 and 23 correspond to computer readable medium claims with limitations and scopes similar to apparatus claims 1-3, 5 and 21. As discussed above, the combination of Yacoub and Lee fails to disclose or suggest each limitation of claims 1-3, 5 and 21 and thus similarly fails to disclose or suggest these limitations in claims 11-13, 15 and 23. Therefore, claims 11-13, 15 and 23 are considered nonobvious for the same reasons as claims 1-3, 5 and 21.

Furthermore, as noted in the January 13, 2006 Office Action, claims 16-18, 20 and 24 correspond to system claims with limitations and scopes similar to apparatus claims 1-3, 5 and 21. As discussed above, the combination of Yacoub and Lee fails to disclose or suggest each limitation of claims 1-3, 5 and 21 and thus similarly fails to disclose or

suggest these limitations in claims 16-18, 20 and 24. Therefore, claims 16-18, 20 and 24 are considered nonobvious for the same reasons as claims 1-3, 5 and 21.

Claim 25 includes the limitation "correcting the print data expressed in the device dependent color system." Thus, claim 25, like claims 1, 6, 11 and 16, requires that the data to be corrected was previously processed such that it is expressed in a device dependent color system. As discussed above, the combination of Yacoub and Lee does not disclose or suggest correcting print data that was previously processed and expressed in a device dependent color system. Also as discussed above, the correction process does not involve color information including a device independent color space. Lastly, the outputted data is not disclosed as being expressed in a device dependent color system. Because the combination of Yacoub and Lee does not disclose or suggest at least these limitations of claim 25, the combination of Yacoub and Lee cannot render obvious the invention of claim 25. Claims 26 and 27 depend from claim 25 and are therefore nonobvious for at least the same reason.

Accordingly, it is respectfully requested that the rejection of claims 1-3, 5-8, 10-13, 15-18 and 20-27 under 35 U.S.C. § 103(a) as being unpatentable over the Yacoub, and in view of Lee, be reconsidered and withdrawn.

The rejection of claims 4, 9, 14 and 19 under 35 U.S.C. § 103(a), as being unpatentable over Yacoub and Lee as applied to claim 1 above, and in view of Hirofumi, is respectfully traversed based on the following.

Claims 4, 9, 14 and 19 depend from claims 1, 6, 11 and 16, respectively. As discussed above, claims 1, 6, 11 and 16 are nonobvious over the combination of Yacoub and Lee. Claims 1, 6, 11 and 16 are nonobvious over the combination of Yacoub, Lee and Hirofumi for the same reasons. Hirofumi, like both Yacoub and Lee, fails to disclose or suggest correction of "print data expressed in a device dependent color system," or a correction process employing color information including a "device independent color space." Lastly, Hirofumi does not disclose the outputted data being expressed in a "device

dependent color system.” Therefore, the combination of Yacoub, Lee and Hirofumi fails to disclose or suggest at least three limitations found in claims 1, 6, 11 and 16 and cannot render these claims obvious. Due to their dependence on claims 1, 6, 11 and 16, claims 4, 9, 14 and 19 are considered nonobvious for at least the same reasons.

Accordingly, it is respectfully requested that the rejection of claims 4, 9, 14 and 19 under 35 U.S.C. § 103(a) as being unpatentable over Yacoub and Lee as applied to claim 1 above, and in view of Hirofumi, be reconsidered and withdrawn.

CONCLUSION

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment does not increase the number of independent claims, does not increase the total number of claims, and does not present any multiple dependency claims. Accordingly, no fee based on the number or type of claims is currently due. However, if a fee, other than the issue fee, is due, please charge this fee to Sidley Austin LLP Deposit Account No. 18-1260.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee,

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and not submitted herewith should be charged to Sidley Austin LLP Deposit Account
No. 18-1260. Any refund should be credited to the same account.

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